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ABSTRACT

One of the significant aspects of the experimental, problem-based teacher education program described in this report is the selection of students who have completed a bachelors degree with a major in an appropriate teaching field, have had three or more years of work experience in addition to their college degree, and who exhibit an acceptable level of relevant competencies and characteristics. The program (commonly known as PROBE) requires students to participate for one academic year of study in a full-time integrated program of study and school experience. When the students are not engaged in student teaching, the majority of their work is organized around study in a tutorial group. When the student teaching experience is completed, students engage in more intensive study and reflection. This final report contains several facets: (1) major questions addressed in the assessment of the program; (2) a description of the program and its several components; (3) a sample upon which the assessment is based; (4) the methodology used in the assessment; (5) instrumentation used in the assessment; (6) results and findings; (7) discussion of the results; and (8) implications for improving teacher education. The appendices contain selected portions of an ethnographic assessment of the program, a practice profile, and a discussion of reflectivity in the progam. (JD)

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UNIVERSITY OF COLORADO TEACHER EDUCATION DEVELOPMENT-DEMONSTRATION PROJECT: FINAL PROJECT REPORT

Submitted to

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Submitted by

Ronald D. Anderson, Project Director

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Appendix A: Selected portions of The PROBE Program: An Ethnographic Assessment

Appendix B: Practice Profile

Appendix C: Reflectivity in the PROBE Teacher Education Program

UNIVERSITY OF COLORADO TEACHER EDUCATION DEVELOPMENT-DEMONSTRATION PROJECT: FINAL PROJECT REPORT

This document constitutes the final report of the project. It contains several facets including (1) major questions addressed in the assessment, (2) the description of the program and its several components, (3) a sample upon which the assessment is based, (4) the methodology used in the assessment, (5) instrumentation used in the assessment, (6) results and findings, (7) discussion of the results, and (8) implications for improving teacher education.

I. Major Questions for the Assessment.

Questions addressed in the assessment pertain both to project outcomes and the implementation process.

Questions related to project outcomes. The following questions are the major ones pertaining to project outcomes which are addressed in the assessment.

1. What impact does the PROBE program have on prospective teachers' teaching competence?
2. How does the program impact students' capacity for reflection?
3. How did the program impact the instructional practices of the faculty?
4. How did the program influence the collaborative relationships between the University and the schools?
5. What impact has the program had on future teacher education activities at the University of Colorado, both within the PROBE program itself and the regular programs?
6. To what extent did students in the program learn various models of teaching?

Questions related to the implementation process. Assessment questions related to the implementation process of the project include the following.

1. How do students become initiated to the program?
2. What is the instructional process used in the program?
3. What is the instructional content of the program?
4. How have collaborative school personnel (including teachers and advisory council members) carried out their roles?
5. How did the instruction on models of teaching fit into the PROBE program structure?

II. Program/Component Description

A brief description of the PROBE program is in order at this point to provide a context for understanding both the questions given above and the description of the assessment process which follows.

The program has a number of significant departures from traditional practice. One of the important aspects of the program is the selection of appropriate students. They must meet the following criteria:

1. Completion of a bachelors degree with a major in an appropriate teaching field,
2. Three or more years of work experience in addition to their college degree (in essence, this means all people in the program are age 25 or older), and
3. Exhibit an acceptable level of relevant competencies and characteristics in an interview conducted by the PROBE staff.

The program attracts a high caliber of students; they have strong academic records, important prior work experience, and considerable maturity. The high quality of students is largely

due to the program's attractiveness to highly capable people wishing to make a career shift. They are fairly evenly split between men and women and have included minority, visually handicapped and learning disabled individuals.

The program requires students to participate for one academic year of study extending from September through May, in a full-time integrated program of study and school experience. During the portions of the program when the students are not engaged in student teaching, the majority of their work is organized around study in a so-called tutorial group of 8 to 10 people which meets twice weekly for three hours each time. The tutor in charge of a group is a facilitator and resource person rather than a dispenser of knowledge. The majority of the work of these groups is organized around a series of quite simple case studies which serve to raise issues. Much of the discussion is devoted to clarifying these issues and expressing them in a form which will serve as a basis for extensive investigation outside the tutorial group.

Throughout the program students have experience in secondary school, as well as in a variety of alternative educational settings. They begin their experience in schools the first week of the program and, under the current organizational pattern, they begin the first of two full time student teaching experiences at the beginning of November. After approximately ten weeks of student teaching (ending in late January at the end of the public school's first semester) they return to the university campus for a period of approximately two months of study. With a solid base of school experience at this point, they can give themselves to

more intensive study and reflection than any other point in the program. The final part of the year as currently configured, is a second student teaching experience in a different school setting.

Some consideration of the philosophical basis for the program is in order here. The program has a consistent and unifying mode of operation, but the underlying theoretical rationale held by the persons responsible for its operation probably varies considerably from one person to another. One faculty member may primarily promote the mode of operation on the basis of a carefully reasoned formal philosophical position, someone else may advocate it mostly from a more pragmatic commitment to a philosophy of "experiential eduation" and yet another faculty member may be committed to it mainly from a constructionist view of learning. For example, even though different faculty members would probably defend it with a different rationale, all would adhere to one of the key operational notions of the program, namely that students must take responsibility for their own learning.

Given this variation in faculty perspectives, and the open-ended and fluid nature of the program, it should not be surprising that successful operation of the program is dependent on close faculty cooperation and commitment to weekly staff meetings where decisions are made after thorough appraisal of the competing alternatives. Experience has shown that a minimum of one and one-half hours for this meeting, and a commitment of all staff to its important role in the program, is essential.

As indicated earlier, students in the PROBE program are expected to take responsibility for their own learning. This operating principle means they are not just to learn a carefully delineated and prescribed set of competencies but are to examine the world of education for themselves in a manner that will allow them to make decisions about what is most important for them to learn and integrate into their personal theoretical perspective and their growing collection of knowledge and skills. Almost by definition, such an approach requires reflectivity.

Since a key characteristic of the PROBE program is helping students to take responsibility for their own learning and construct their own meaning as a result of their educational experience, it is not surprising that reflectivity is a highly desired outcome of the program. The initial event in the program, a three day retreat at the very beginning of the academic year is the beginning of this focus. Evaluations done of the program over the years consistently have labeled this event as essential to the program. Its primary function is to foster communication among everyone concerned and begin the group-building process which makes it possible for people to work well together. In addition, however, it is the beginning of the process of helping people take responsibility for their own learning. Various activities or "initiatives" in which the students are placed require them, independent of faculty assistance, to begin solving problems and addressing educational issues. The focus is on them as individuals, the group, and the "educational world" into which they are seeking to enter and establish a career.

The previously mentioned tutorial groups have many of these same characteristics. A climate is created within these groups which fosters collegiality, cooperative learning and mutual support. Within this context, the pursuit of intellectual ideas is invigorating, challenging and also focused on the real world of schools which they are simultaneously experiencing. The process by which case studies are pursued in this context may be illustrative of the point.

The particular case studies to be pursued at a given time in a particular tutorial group are selected by the students while considering the list of state mandated competencies expected in the program during the year, their recent experiences in schools and personal reflection on their development as professional educators. The manner in which the case studies are addressed is largely prescribed; the role of the faculty member in the process is largely that of a facilitator and resource person, rather than dispenser of knowledge. The beginning point of the discussion is the clarification of issues raised in the case study. The group may spend as much as an hour identifying the several issues raised and getting them into a form that will serve as a basis for the extensive investigation they will pursue as a group and individually.

Initial identification of resources to use in addressing these issues is done in the group with the assistance of the participating faculty member, followed by individual work outside the group which serves to identify still further resources. These resources include standard printed materials available from various sources as well as personnel within the university and

the secondary schools where the students spend some of their time. Interviews with teachers, administrators, counselors and policy makers are among the resources to which the students turn in addition to standard reference materials.

Once issues are identified, individuals, or two or three persons working together, pursue a particular issue in depth. At this point, the ability to work independently, to take initiative and to complete tasks becomes imperative.

A week or more later, after completing their independent work on a particular issue, individuals report the results of an investigation to members of their tutorial group. To some extent they provide the teaching for their peers on a particular issue. In addition, they direct them to the most useful resources for pursuing their individual study of the various issues.

Coverage of the important matters needed in the teacher education program is ensured by inclusion of case studies which parallel a listing of competencies required for certification by the Colorado Department of Education. These requirements are used within the tutorial groups as a guide for the students in defining areas which they must address. Due to substantial differences in the background of individuals in the program, as well as personal interest, there is considerable variation in the amount of time individuals devote to a particular topic. In each case, however, individuals pursue the various topics in sufficient depth to meet formal expectations.

One of the components of the work within tutorial groups in recent years has been study of various models of teaching as

described in the book by Joyce and Weil, Models of Teaching. In keeping with the character of the PROBE program, the study of these models has been organized to a considerable extent by the students themselves. Their study of these models has included (1) study of the models in this book, (2) modeling of selected models by the students themselves in the form of instructional lessons presented to demonstrate particular models, (3) assessment of these demonstrations by fellow students to ascertain the extent to which the models were correctly represented, and (4) opportunities during their student teaching experience to practice the use of various models.

In keeping with what research says about human learning, the responsibility which individuals take for their own learning results in high motivation, large amounts of work completed and high levels of competency. High expectations are placed on them by their tutors and their peers, and they are accountable to them as well, but responsibility for one's own learning is the cornerstone of the program.

While reference already has been made to students' experience in schools, it probably deserves further discussion with respect to reflectivity and its total role in the program. Prior to student teaching the typical student probably spends one and one-half days per week in the schools. It is not just observation and participation in the classic sense. It also is a source of information for some of their case study research as described earlier. This is the context in which they are able to interview school personnel to acquire some of the needed information. It also provides experiences which are brought to the tutorial group

for discussion and analysis as a further aid to the process of reflection. In addition to regular contact with one school, they are encouraged to visit a variety of different schools and teachers. Mechanisms have been established which make it possible for them to initiate contact on their own, through the principal's office, with a wide variety of schools in several district.

A recent modification to the program may illustrate further its evolving nature and dependence upon student decision making in its operation. For the first time this year, the program has been structured so the first period of student teaching ends in late January (the end of the first semester of the public schools). This period is following by approximately two months back on the University campus before they return to a different school setting for a second student teaching assignment.

A process was initiated at the beginning of this two month period in which they developed with the faculty a plan for conducting their study. The one and one-half day process resulted in a plan which includes (1) a focus on practical educational matters examined by task groups interested in particular perspectives (philosphical, sociological, psychological and content areas), (2) individual study with a heavy writing component requiring personal integration of perspectives on practical matters and compilation of teaching resources, (3) tutorial group sessions with primary attention to the integration of knowledge and (4) weekly total program meetings for coordination and sharing of resources best done in that context.

III. Sample

The sample of people included in the experimental project include the following:

- Approximately 30 preservice teacher education students with a bachelors degree and work in their subject field completed who are engaged in a year long integrated teacher education program.
- Six staff members, including faculty members and graduate teaching assistants.
- Approximately two cooperating teachers for each of the students enrolled in the program each year.

IV. Methodology (data-gathering process)

The qualitative data gathering processes used in this study include participant-observation, ethnographic interviewing, and survey data gathering.

This data was gathered mostly in the context of the on-campus portions of the teacher education program from the teacher education students and the program staff. A small amount of additional information was gathered from school personnel in the field.

The data was gathered in the standard ethnographic manner of notetaking of participant observers, acquiring transcripts of interviews, and observer preparation of written impressions, as well as by written surveys.

Given the holistic nature of these ethnographic approaches, the data gathering process is not broken down here by individual research questions. All aspects of the process produce data that is potentially relevant to all the questions.

V. Instrumentation (data-gathering tools)

The data gathering tools used in this qualitative approach were of four types.

1. Participant observer field notes.
2. Interview notes and transcripts of interviews.
3. Reflections and impressions written by ethnographers.
4. Survey data acquired by written questionnaires.

This data was gathered over a two-year period, specifically years 2 and 3 of the project. The great majority of the data used in the following analysis, however, was gathered in the last half of year three.

This limited data gathering period was not by design but the result of unanticipated problems that occurred in year two. A doctoral student with specific training in ethnographic methods and strong recommendations was given a half-time appointment in the project with a largely independent role (to maintain objectivity) as ethnographic researcher. She was actively involved throughout the year in participant observation, interviewing and related activities. During the summer between years two and three it became apparent that the appointment of this person had been a serious mistake. She had difficulty producing a product from her year of work and what was produced was not of acceptable quality. Her product was reviewed by a professional ethnographer and judged to not meet professional standards.

Because of her proven lack of competence, this person was not reappointed at the beginning of year three. The past problems were compounded, however, by the unavailability of other persons

with the needed qualifications. The dilema was finally resolved when a Ph.D. anthropologist was located who could take on the responsibility. He was not able to begin until January, but even though late in the project, there finally was a competent person working on this task. Through a fairly large budget shift which was approved by the contract officer, Dr. Joe Harding was employed. He is an experienced anthropologist with an extensive history of working on applied anthropology projects, including several educational projects. He made a very positive contribution to the project. Four sections of his final ethnographic assessment report are included as appendix A of this final project report. They are drawn upon extensively in the section below.

VI. Results/Findings

Results of the assessment done of the PROBE teacher education program are contained in several documents, but primarily in the major ethnographic report prepared by Dr. Joe Harding. Given the nature of such reporting, with its lengthy narrative descriptions, and the multiplicity of sources, the results reported here will be in capsule form with reference made to appendices which contain all or portions of these other documents. These documents include:

Appendix A: J. Harding, The PROBE Program: An Ethnographic Assessment.

Appendix B: R. Anderson & R. Grimm, A Practice Profile.

Appendix C: R. Anderson, Reflectivity in the PROBE Program.

The capsule summaries below are organized by the research questions under investigation.

1. What impact does the PROBE program have on prospective teachers' teaching competence? The assessment of teacher competence, in keeping with the character of the program itself, was largely done in a "global" manner with attention to broad competencies rather than in terms of measuring a large number of highly specific competences. In general it can be said that in the judgment of the faculty conducting these assessments as part of the program, the students themselves and personnel in the school districts where the students did their student teaching, the students developed a high degree of proficiency as teachers. For more descriptive information, see sections IV. and V. of Appendix A.

2. How does the program impact students' capacity for reflection? Capacity for reflection is one of the major goals of the PROBE teacher education program. It also is one of its major accomplishments as evidenced by the behaviors of the students in their tutorial groups and in student teaching. Although this aspect of the program is addressed at various points in the ethnographer's report (see sections III., IV. and V. of Appendix A), the fullest information on this point is contained in a paper written specifically on this topic (see Appendix C).

3. How did the program impact the instructional practices of the faculty? Given the definition of the PROBE program and more particularly the way in which it is organized and structured, it is almost impossible that it would not have a major impact on the manner in which the faculty teaches -- at

least if one assumes that the faculty previously taught in one of the many variations of what may be called a conventional manner of teaching. The ethnographic study provides extensive descriptions of student/staff interactions which document that the faculty taught in a different manner than is typical of a teacher certification program. Although there are instances of faculty members reporting that participation in the PROBE program resulted in a significant impact on their teaching practices in conventional courses outside the PROBE program, this question was not addressed directly in the program assessment. For more information on the instructional practices of the program, see section III. of appendix A.

4. How did the program influence the collaborative relationships between the University and the schools? During the past three years of the program, the collaborative relationship between the University and the schools has evolved in a very positive manner. During the past year, for example, six master teachers from two nearby school districts were appointed to full-time one-year positions that involved major responsibilities both in their districts for mentoring new teachers and teaching inservice education classes and in the University for teaching preservice teacher education classes. One of these "clinical professors" during the past year served as one of the three professors in the PROBE program. For the coming academic year this program of collaboration is expanding to include an additional school district and additional clinical professors. The emergence of this collaborative relationship is a most

positive development.

It fairness, however, it should be noted that these positive developments had little if anything to do with the presence of the PROBE program. They were the result of strong leadership in the School of Education and the PROBE program was one of the beneficiaries of it. At best, it could be said that the presence of the PROBE program may have been somewhat of a contributing factor to the growing positive relationship, based simply on the positive image the PROBE program has among school personnel. This positive image is addressed in section V. of Appendix A.

5. What impact has the program had on future teacher education activities at the University of Colorado, both within the PROBE program itself and the regular programs? The future looks bright for the PROBE teacher education at the University of Colorado, assuming faculty members wishing to teach in it continue to be available to staff it. Assuming the program continues, there is every reason to expect it will continue to have a favorable image among school district personnel, students and those faculty with a close working knowledge of it. This very issue, institutionalization of the program, is the subject of section VI. of the report contained in Appendix A.

6. To what extent did students in the program learn various models of teaching? Instruction in the various models of teaching was included in the program. The students studied the book, Models of Teaching by Joyce and Weil and engaged in demonstration teaching of various models in simulated classroom situations. This instruction was done within the context of the PROBE program which meant that students had a major role in

developing the procedures by which it was done. Student response was positive, but it would not be appropriate to say that it was one of the highlights of the program for the students or one that they would identify as absolutely essential to retain in the future. What has been said thus far, however, does not really address the question of the extent to which they "learned" various models. To be assured that particular models had been "learned" would require systematic observations during the student teaching phases of the program to systematically measure the extent to which the students displayed the use of the various models. Such extensive and expensive systematic observations were not part of the PROBE assessment plans.

In addition to the above questions about the project outcomes, several questions related to the implemetation process were addressed. These questions were listed individually in section I. of this report. At this juncture, some of them are clustered together for attention. The following item is a combination of the first three questions in that list.

7. How do students become initiated to the program? What is the instructional process used in the program? What is the instructional content of the program? All of these questions seek descriptive information about the program. These questions already have been addressed in section II. of this report entitled, "Program/Component Description." Further information is provided in the appendices including section III. of Appenix A, the article on reflectivity in Appendix C and the "Practice Profile" given in Appendix B.

8. How have collaborative school personnel (including teachers and advisory council members) carried out their roles? Collaborative school personnel have played three different roles in the PROBE program: clinical professor as described earlier, cooperating teacher and advisory council member. The clinical professor role was not envisioned at the beginning of the three contract with the Department of Education. It is now an established and important role.

At the beginning of the three year contract, it was expected that cooperating teachers would begin to occupy a decidedly more important role than they traditionally had in the past, largely due to training sessions which would be conducted as part of the program. Although the training sessions have been conducted as described in the original proposal, the more important role for cooperating teachers has not resulted. The one day of training provided at the beginning of each of two student teaching assignments each year simply has not been enough to make a substantial change in role for the cooperating teachers. These sessions have been useful and have resulted in more positive relationships with the cooperating teachers but it is not enough to make a big role change.

The twice yearly meetings of the advisory council have been quite useful. They have resulted, for example, in the districts agreeing to provide support for continuing the sessions for cooperating teachers after the contract ends this year. A pattern which was started as a result of the project is expected to continue on into the future even though the purpose of these sessions for cooperating teachers will be somewhat different than

originally envisioned. The advisory council also is expected to continue in the future.

9. How did the instruction on models of teaching fit into the PROBE program structure? The instruction on models of teaching was provided each year as described in the original proposal. Whether or not this instruction will continue as part of the program is an open question. It will appear in the program in the future only if the particular faculty members working in the program at that time are convinced of its worth, and convinced enough of its importance that they will lobby for it and press for its inclusion. It will not appear in the program because of a mandated requirement that it automatically be included. The only matters that have that status are those specifically mentioned in the requirements of the Colorado Department of Education for all teacher education programs. Since the great majority of activities in the program appear there as a result of student decision-making under the influence of the State guidelines, the models of teaching are not assured of a place in the program unless the particular faculty members involved in a given year have strong convictions as to their importance. Given the rotating faculty assignments involved the question will be addressed year by year.

VII. Discussion of Results

Given the ethnographic nature of the research involved and the many interrelationships of the matters under study, the discussion of results will only generally parallel, rather than follow exactly, the questions which organized the presentation of

findings above. The discussion which follows addresses some of the most significant matters as judged from the perspective of an insider to the project.

Possibly the most basic assessment question is the impact of the program on the professional competence of the prospective teachers who complete it. It is a difficult question to address given the complex nature of the teaching task and the current state of procedures for assessing an all-encompassing and general competence as a teacher, and the great expense of doing an assessment which is this sweeping and reflects current state of the art techniques. In addition, a good assessment of competence by such a definition would require that it be done in the context of a regular job as a teacher after the person had completed the program and accepted employment. Such an assessment has not been done and given the expense is not likely to be undertaken in the near future.

One broad sweeping generalization, however, remains to be made here. It is an outgrowth of both some of the ethnographic results reported above and informed professional judgment of people working in the program. In general, the persons completing the program differ from persons completing a conventional program in a very important way, namely their overall professional perspective on their role as a teacher and their sense of efficacy in the total educational setting. The graduates of the program understand how the "system" works, are able to make it work for them, and have an expectation that they will play a role in shaping it. Coupled with the experience of having been

involved in student-centered education, these people can be expected to be a part of attempts to reform education to a larger extent than the typical person leaving a teacher education program.

This point is related to the matter of reflectivity, one of the key foci of the program. The program does foster it, both in the more usual sense as it pertains to classroom instruction and in the broader context addressed above. This reflectivity in turn may be related to the choice of teaching strategy to employ in a given teaching situation. While development of proficiency in using a given model of teaching is important, the more important reason for attention to these models may have to do with the selection of particular models to use in given situations. This choice is a reflection of educational objectives and basic values about the role and nature of education. The perceived strengths of the PROBE program have a lot to do with this reflective depth. There is every reason to expect that the graduates of the PROBE program will make greater than average use of more open-ended, student-centered instructional approaches in their subsequent careers.

Collaborative relationships with school districts have not been a central focus of this project. As indicated, a climate of collaboration between the schools and the University has emerged, essentially independently of the PROBE program. The program has benefited from this increased collaboration in the form of clinical professors who teach in the program. But the PROBE program itself does not demand a different than conventional role for public school personnel. It does demand indepth experience in

the schools, but the nature of this experience is shaped by what occurs in the program itself, not by a different role for public school personnel. The past year saw a variation in the program which probably will be expanded in the future. One tutorial group held most of its meetings in a high school, the one in which all of the students in that group would then do their first student teaching. Again, the intensity of the collaborative relationship is building, but thus far it does not involve major role changes on the part of the cooperating teachers.

Another group of people involved in this endeavor have had to make a major role change. As described earlier, the role of the faculty in the PROBE program is distinctly different than the conventional professorial one. Such shifts have not always been easy, in that the professors involved have had to learn the new roles individually, often by trial and error and certainly without any formal training. This fact, along with the heavy time demands of working in the program, may be behind the fact that a large number of faculty are not seeking out an opportunity to teach in the program.

The future of the PROBE program at the University of Colorado is strongly tied to the availability of faculty members wanting to teach in the program. The past years of experience have highlighted the program's strong dependence upon the availability of a particular kind of faculty member on a continuing basis. The distinct role shift and the heavy time demands mean this availability can not be assumed casually.

VIII. Implications for Improving Teacher Education

A culminating reflection in this discussion pertains to the very nature of the program itself. Its nature is profoundly different than conventional programs, even very "innovative" ones, because of the underlying philosophy and mode of operation. Most teacher education reform today is not based on the idea of fundamental change in the very character of the education provided to future teachers. The PROBE program clearly does involve that fundamental change in character. In spite of the difficulties of maintaining a program of such distinctly different character in the midst of a culture with a different orientation, one would hope for a long life span for the program for many reasons. Its benefits are not only for the students it serves; its presence in academe is important as a leavening agent, as a stimulus for thinking of the unconventional approaches and as a prod for thinking deeply about the very nature of the education we are trying to provide. It is unrealistic to think that this kind of teacher education will become the norm, but its presence in many places scattered among teacher education institutions could be a provocative force for fostering the rethinking of what teacher education is all about.

APPENDIX A

Selected portions of

The PROBE Program: An Ethnographic Assessment

III. THE NATURE OF PROBE

Students

One of the greatest strengths of PROBE is the type of student it attracts. Participants bring a great variety of experience, skills, and maturity to the program. This contributes greatly to the learning process and, perhaps, to the subsequent teaching success of those who have completed the program. Since PROBE participants must have completed at least a bachelor's degree and have had several years' work experience before entering the program, the group is very diverse. The following examples drawn from this year's cohort typify the range:

--Female; BA, MS in Geology; worked as a petroleum geologist with Texaco for 3 1/2 years; parent of two small children. TC in SECONDARY SCIENCE.

--Male; BA in Anthropology, MS in Geology; worked one year as a geological technician, one year in an oil field, then for six years as a field archaeologist; including PROBE, has completed 12 years of college. TC in SOCIAL STUDIES/SCIENCE.

--Male; BA in Humanities, M.Div. in Philosophical Theology; worked as a pastor, a jailor, and an electronics draftsman. TC in GERMAN.

--Male; BS in Civil Engineering; work as an engineer included many types of practical mathematics applications; "a bizarre array of varied experiences that has taught me a great deal of tolerance for differing styles of people." TC in MATH.

--Female; Ph.D. in Anthropology; has 7 years of university teaching experience; mother of two children. TC in SOCIAL STUDIES.

--Male; Ph.D. in history; university teaching experience; not satisfied teaching college students, thinks high school teaching will be more rewarding. TC in HISTORY.

--Male; BS in Chemistry, MS in Geochemistry; 4 years active army, 12 years reserve; worked for two years as a miner and 6 years as an industrial chemist and engineer. TC in SCIENCE.

--Male; BA in Geography; worked as a national

park ranger for 5 seasons, taught outdoor education/wilderness conservation for 7 seasons, was a ski racing coach for 6 seasons, and worked as a cartographic draftsman for 2 1/2 years; has travelled in 22 countries on 4 continents. TC in SOCIAL STUDIES.

--Male; __ in _____; worked as a tuna fisherman off the Alaska coast. TC in ENGLISH.

-- Female; __ in _____ ; has taught drama in high school, been a drama consultant to a number of different schools; TC in DRAMA.

--Female; degree in Nursing; has developed a strong career track as a nurse, but does not find it completely satisfying and is considering a career change. TC in SCIENCE.

--Male; BS in Wildlife Biology; traveled extensively as a child in the US, Europe, and Mexico; after college joined the Peace Corps and taught for two years in rural Kenya, worked for 5 years as an outdoor educator with school camps and a camp for disadvantaged youth from East St. Louis. TC in SCIENCE.

--Male; BS in Biology; spent two years as a Peace Corps Volunteer in rural Ghana, worked for two years as a field cartographer moving every 4 months to different locations in the US West. TC in SECONDARY SCIENCE.

--Female; BA in Geography; did seasonal work in national parks, worked for two years in retail management but felt too removed from her degree. TC in SOCIAL STUDIES.

--Female; BS in Geology; worked as an engineering geologist throughout the east coast states then with a mining consulting company throughout the western US; spent 4 months in Iran, lived in Canada for 4 years, then worked for a consulting engineering geophysical firm for two years before entering PROBE. TC in SECONDARY SCIENCE.

Staff

PROBE staff rotate from year to year. For the 1987-88 year, the staff consisted of two full professors from the School of

Education (Anderson and Openshaw), a "master teacher" (Title) from the St. Vrain School District with 20 years teaching experience, and three Ph.D. students from the School of Education (Ginsberg, Grimm, and Pence). Additional faculty and other resource persons are brought in for special presentations as the need arises. Figure 1 provides the staffing pattern since the inception of the program in 1982.

FIGURE 1 : HISTORY OF STAFFING PATTERN

Year	Director	Other Sch. of Ed. Faculty	Other Staff
1983-84	Openshaw	Page	Conley
1984-85	Kraft	Page, Anderson	Burger Groves Title
1985-86	Anderson	Page, Kraft	Burger Groves Kolitch
1986-87	Page	Kraft, Haas	Burger Grimm Kolitch
1987-88	Anderson	Openshaw, Title	Ginsberg Grimm Pence
1988-89 (tentative)	Openshaw	Kraft, (?)	Pence (?) (?)

Student and Staff Interactions

Student/Student Interaction

For the most part, students are sensitive to each other's problems and needs. While small group discussions may at times become very lively, intense, and critical, by the end of the session the group bond has usually been reaffirmed. On the few occasions when negative feelings persisted beyond the end of a session, one of the tutors and/or the students made a special effort at the next encounter to re-establish a collegial atmosphere. As one staff person commented:

On the moment-to-moment stuff [e.g., in tutorial groups], they can be tough on each other. Over the long haul, they really support each other. For example, "X" will call "Y" at night if something has happened [at the tutorial group or during student

example, "X" will call "Y" at night if something has happened [at the tutorial group or during student teaching].

During tutorial group and perspective group sessions, students are almost always respectful and supportive of each other. Rarely does a speaker not receive the full attention of the other members of the group. Even when disagreeing, a student will usually acknowledge the legitimacy of the other's position and provide various types of positive reinforcement for participating in the discussion. Students are especially supportive of each other's right to speak and present their own point of view when they think a staff person is exerting too much dominance over a fellow student.

For example, on one occasion when a staff person and a student had been trading comments back and forth for a couple of minutes on the topic of "manipulation" in the classroom, the staff person finally said:

You are not with me; I don't want to pursue it further. Others have things to say.

At this point, rather than changing the topic of conversation, three other students immediately responded to "Z" in an attempt to help clarify this student's position, to provide personal support for the student, and to interpret the difference between what the student had been saying and what the staff person had been saying. Two of these "supportive" students then went on to further explain "Z's" position and to add an additional comment about "manipulation." A fourth student then said:

This is a personal thing. Maybe we all need to think about it. "Z's" position is very different from mine. Maybe we should talk about it some more.

The staff person then said to the fourth student, "We only have 10 to 20 minutes left." At this point, "Z", who had been acting as moderator for this tutorial group discussion, re-asserted that role and said, "Do we want to discuss competition?" The students had fairly effectively blunted the staff person's abrupt comment to student "Z"!

At the end of this session, when the staff person asked for feedback for "Z" in the role of moderator, several positive comments were made along with some constructive criticism. The staff person then stated:

This was the highest level of interaction we've ever had.

There followed a few more comments that indicated there was still an issue (a "battle that won't be resolved") between the staff person and "Z", but it was very civil. At the very end of the session, one of the students then announced that there would be a

potluck on Saturday at her house for anyone who cared to attend.

Student/student interaction was not confined to formal PROBE activities. As the potluck announcement indicates, students got together outside the "program" on a fairly routine basis. There were a number of close friendships that developed; several students visited back and forth; and groups of students routinely met for lunch after tutorial or perspectives group sessions.

Student/Staff Interaction

The role of the PROBE staff is to act as a guide, a facilitator, and a resource person for the students. A staff person is to be a "guiding hand" that is lightly utilized to allow as much student decision-making and self-discovery as possible. This is a difficult role for most staff to maintain since it runs somewhat contrary to the more traditional faculty role of teaching by "holding forth" rather than facilitating learning by gentle guidance and discovery.

A more-or-less typical example of student/staff interaction is the following, from a tutorial group meeting. In this somewhat extended sequence, it can be noted that the staff (Staff 1 and Staff 2) serve primarily as facilitators - to ask questions that will elicit additional responses and to keep the discussion from getting too far afield from the general topics of discussion. Staff also are utilized in the role of information source on particular topics. They do not dominate the discussion. Students (S1, S2, etc.) can be seen to be generally supportive of each other; they bring in ideas from a variety of perspectives, and, importantly, all students in the group participate - even though some do so much more than others.

9:14 (Staff 1)makes announcements about professional organizations and distributes some materials. There follows a discussion about Phi Delta Kappa, teacher's organizations, and Bueno.

(Staff 1) "What about perspectives groups? S1"

(S1) "I will report on stuff from the psychological perspective group, with notes from S2 and S3, on mastery learning and direct instruction.

S1 makes a presentation of materials from the notes. There is a discussion of SRA.

(S4)I hated it; it became too competitive.

(S5)Guess who loved it?

(S6)You [S5] were always at the "gold."

(S5)Yes.

(S6)I always read the materials, but refused to answer the questions, so I was always in the lowest group.

(S4)Just say "SRA," and I'm off....

(S6)I got paddled [in a state school] because of the SRA.

(S7)There are a number of devices for sorting. I don't know how I feel about them. For example, "mastery learning."

9:32 (Staff 1)[Gives an explanation of mastery learning] Sometimes it's very effective - effective as a management technique to keep kids on task.

9:33
S1 provides some more explanation.

S8 provides some explanation on current practice.

S6 discusses.

9:34
Staff 2 responds.

S7 and S1 have a one-on-one interaction on "unified [science] units."

S4 gives an example of her daughter in Montessori School, talking about a good teacher versus other (bad) teachers she has encountered. Mentions how in Montessori you have to master one level before you go on to the next.

S8 asks a question about the Montessori philosophy.

(S4)[being forceful/dominant; others quiet down] It really depends on the teacher and the school. Some Montessori are very behavioristic

(S1)I was just trying to present this - not to say that it was good or bad.

(S6)Without discussion?

(S1)What happens so often in these groups - you never get through the presentation.

(S6)We won't count our discussion as part of your 20 minutes.

(S8)What do you think about _____'s idea of going/learning at your own speed?

S9, S6, and Staff 2 respond.

S10 responds.

S5 is still reading his notes.

9:44(Staff 1)It seems you are trying to wrestle with _____ and also _____. S1, I think you are frustrated with not being able to present your stuff. Do you want to charge ahead?

(S1)You picked up on that!?

(Staff 2)First, [Staff 1], could you distinguish between mastery learning and competency-based learning?

9:45[Staff 1 explains, with some discussion.]

9:46(Staff 2) I'm sorry to slow you down, [S1].

(S8 and S6) This is great, [S1]. Thanks!

(S1)But, I feel ... [like it is not all getting across to the other students].

(S8, S6, and others) You are doing fine! We don't expect you to know it all ....

9:47
S1 goes on with more explanation from S2 and S3's notes; mentions a study through the Head Start programs for "kids from disadvantaged backgrounds;" suggests that this might be real helpful to use.

9:50(Staff 1) [provides information on previous research, is interrupted as someone comes in the classroom, then goes on] Studies have shown ....

9:53
S8, S4, and S9 have a discussion.

9:56(S10) This seems like a good way to do algebra.

(S7) I see it as ....

9:57
S4 poses a question. Comments are then made, in turn, by S6, S10, S6, S8, and S7.

9:59(S5)I have trouble applying this to social studies, other than teaching [x and y facts]. [He gives an explanation of religion in Egyptian society.]

10:00
S1 responds with a suggestion to S5 that is tied to using

Bloom's taxonomy.

S8 also responds with a suggestion for how to teach social studies.

10:02
S1 responds to S8.

(S5)I understand that. But, how do you drill on this?

10;04
S9 discusses this and provides a suggestion, using a narrative.

(S5)This is valuable. I asked. Everything you have suggested, I have done. Maybe I'm not connecting with this model.

10:05
(S8)[discussion, then] This is based on behaviorism, and I don't like it.

(S1)You don't have to buy it. I'm just presenting this perspective.

S8 and S5 go back and forth on the approach.

10:07
S6, S10, S6, and S8 go back and forth discussing the topic. S1, Staff 1, S8, and S5 discuss what S5 means.

10:10
S5 explains the value of the discussion to him.

(Staff 1) S1 wants to go on.

(S1)Do I? I have more to present.

(S6)You are being a great teacher.

(Staff 1) I have some comments on research, but it can wait.

(S1)Go on, I was about to "jump traditions" - to Bloom.

10:15
Staff 1 gives an explanation of research findings in this area.

As can be seen from this tutorial group exchange, there was considerable interaction among the students - all participated to some degree or another. There was occasional participation by the staff - in this case, to help keep things on track and to provide some basic information about the topics of discussion.

The discussion seemed to keep flowing fairly well, was thoughtful and creative when the staff maintained the "facilitator" role and where their involvement was periodic. While there are sometimes exceptions to this role for the staff, it is the norm. Also, while there are sometimes exceptions to the collegial interaction among students, this also is the norm.

In at least two cases during the semester's observations, the staff diffused potential personal conflicts within the small group context by suspending normal discussion for a session in order to concentrate on learning and practicing group process techniques. This was positively received by the students and seemed to reduce frustration levels considerably.

Thus, for the most part, the staff are sensitive and supportive in most contexts. Each staff person, of course, has a different style and a different background upon which to draw. Since the tutorial leaders have a wealth of professional experience, a well established set of beliefs, and have all spent considerable time utilizing the "lecture" mode of teaching, there are times when they tend to dominate a discussion - even when the students are not looking to them as a resource. On these occasions, the frustration level rises for students. They either sit back and acquiesce or increase their mutual support. In either case, it is a situation that tends to distance students from staff rather than promote the "colleague" relationship that is the PROBE ideal. The following example illustrates this point.

At a tutorial group meeting, a couple of students had not participated very much during the first half. Staff 1 had taken a fairly active part in the discussion about whether or not the schools are a change agent. Staff 1 was operating as a "facilitator" much of the time, but was also interjecting a number of comments.

After the break, Staff 1 said to S1, "You haven't said anything today. What do you have to say?" S1 then launched into a fairly long statement about how teachers were, in general, doing a fairly good job - not just "training worker bees" for society. S1 commented that some students' parents cannot help with homework because they are uneducated. S1 then went on to say:

This is the main kind of barrier, not the schools. Some schools are not too effective in overcoming it. Some teachers are not effective, but I don't think they are guilty of this plot of keeping the little buggers in their place. Teachers have made a decision, in good faith, of what's important for the students - and they are doing it.

(Staff 2) Why are they ineffective, then?

Staff 2, obviously in disagreement, continues to question S1, somewhat oppressively. Staff 1 remains silent, even though he had asked for S1's opinion. The exchange goes on between S1 and

Staff 2 for a while and then other students begin questioning S1. Toward the end of the meeting, there was an attempt to diminish the "heat" that S1 had been taking throughout the discussion. The following exchange then took place:

(S2) S1 is a breath of fresh air [for playing the "devil's advocate]. He's practical.

(Staff 2) S1 is conventional.

(S1) Thanks for pigeon-holing me!

This was a case where the group attempt to re-affirm the "PROBE bond" prior to the group's breaking up was somewhat thwarted by a staff person. While this was unusual, it does indicate that personality conflicts can become a factor when a program is structured in the manner that PROBE is.

In this case, after the meeting was over, several of the students met to evaluate the tutorial. Their assessment was that:

- Staff 1 took the lead early on and sort of dominated the discussion.
- Perhaps we [the students] should have taken the lead in the discussion.
- A dichotomy of interests existed between the two staff: one was trying to keep the group on "school in society" while the other kept going off on "what does a learner look like."
- Staff 2 dominated the discussion too much.
- oS1 got jumped on a little too much.

The students took their evaluations seriously, watched for similar future situations, and attempted to keep them from occurring in the same fashion. It was reported that over time the group discussion did smooth out, with staff taking a less dominant role.

Students <u>do</u> value the knowledge and experience of the staff. They <u>do</u> want to use the staff person as a resource. But the prefer, in line with the PROBE ideals, to be able to ask for information about specific topics rather than to have the staff person dominate a discussion with their point of view to the extent that some students feel too intimidated to present their viewpoints.

The delicate balance that must be maintained by tutorial and perspective group leaders is probably one of the most difficult, and crucial, aspects of program operation. Staff must guide without dominating; they must be an informational resource but present their particular ideology in such a way as not to stifle

dissent or exploration of other viewpoints; and they must do all this while maintaining a colleague, rather than teacher/student relationship. This is particularly difficult since their's is also the role of student evaluator. In the case of some staff, students were able to overlook this "dominance" aspect of the role since they were rarely "threatened" by the staff in the context of discussions. In other cases, students felt more threatened and thus more distanced from the staff.

While the quality of staff was considered by all students as one of the major strengths of the PROBE, many students also indicated that the tendency to dominate discussions at times was also one of the program's weaknesses. This is, in part, what was behind several recommendations concerning some type of rotation of staff and students over the course of the year.

For the most part, however, the tutorial groups and the perspective groups are examples of the PROBE "model" in action. This is especially true for the two "project fairs" that were held this year. One student's presentation concerned the importance of creating and maintaining a "safe haven" where students can work on establishing a sense of self-esteem. As ungraded presentations, the project fairs were good examples of how PROBE can partially attain its objective of actually modeling a teaching/learning environment which could be used in the schools where PROBE students will soon be teaching. Both students and staff considered the project fairs to be enjoyable learning experiences with high quality presentations that gave students an opportunity to share what they had researched with their colleagues.

Staff/Staff Interaction

Staff generally interacted with each other in a sensitive, supportive, and professional manner. While the three graduate assistants were obviously aware of their junior-level roles with respect to the three senior faculty members, a collegial atmosphere was maintained. There were some frustrations, however.

In one case, as one staff person increased participation in the small groups the other "compensated" by decreasing participation so that the staff/student discussion time ratio remained relatively constant. The students' response to this situation was to eventually suggest to the "reticent" staff person that additional participation would be appreciated. By that time, the two staff had also noticed the change, discussed it, and had determined that they should maintain a better balance during discussions.

In another case, a junior staff person had to spend a considerable amount of time during small group sessions out of the room handling administrative matters. There was, thus, not as much time to contribute as a group member to the learning

process. While this was a difficult situation to rectify, perhaps a little more advance planning would allow for a better use of that staff person's skills and knowledge during the group learning process.

Some minor staff/staff conflicts did exist - which is to be expected. For example, there are differences of opinion about staff style and the role of facilitator:

I try to keep a low profile; I see myself as a less intensive, but strong, personality. [Staff 2] and I are very different. I can be intrusive with the best, but I feel guilty if I talk too much.

When [Staff 2] and I were both doing [a group], one of us had to "get out of town." Our approaches were diametrically opposed.

As was the case among many of the students, not all the staff were comfortable with the level of uncertainty that characterized the planning process. Again, as with the role of the staff, there seems to be a fine balance that must be maintained with respect to program planning and implementation between structure and flexibility - between program "givens" as defined by the staff and program development as determined by the students. As one staff person put it:

There need to be clearer expectations in the beginning. The staff expectations need to be written down.

Part of the program is ambiguity, but I have to have some way of doing grades. I felt I needed to nail that down.

We have done things differently between tutorial groups but, personally, I feel I have to present them with my expectations of what I want to see.

Also, the students have expectations regarding resources, information, etc. They have made a big career decision to come into PROBE. Some of these things need to be voiced at the retreat, up front.

There are also some other problems. With respect to student/staff and staff/staff communications, students do not always get the same story from different staff about program activities or procedures. On the other side, some students slack off at times. These are areas where improvements could be made.

IV. STRENGTHS AND WEAKNESSES OF PROBE

Information was gathered throughout the Spring semester of 1988 about what students, staff, and other School of Education faculty perceived to be the strengths and weaknesses of the program.

This data gathering occurred as a result of researcher observations, informal conversations, written evaluations at the time of the first project fair in March, group discussions and written evaluations at the May wrap-up session, and personal interviews with students, staff, and other faculty throughout the semester.

Strengths

The PROBE "philosophy" or model, outlined earlier, basically seems to be working. Students do participate in determining and deciding what and how learning is to take place. Some participate a little more than others; some more vocally; some more persuasively; some more conservatively; and some with more authority. But, all do participate.

The approach is problem oriented; students do learn through inquiry. They are creative. They do think critically. They do function more-or-less amiably within a small group context. They do come to conclusions within that context and utilize the context for learning. **The process works.**

Think, for example, of the "chaos of January 28th" - as some have referred to the second semester kick-off meeting. There were many complaints from students about how unstructured it was, how the process floundered? But, the students worked at it. They worked in groups. They exhibited leadership; they supported the others in the group; they came to tentative conclusions after offering and discussing diverse suggestions; and something came out of it. What evolved was the PROBE learning structure currently being used. The previous structure was modified to incorporate the perspectives groups, and all that has gone along with them.

Students seem to be fairly positive about the perspective groups and see them as one of the current strengths of the program. Many have expressed the opinion that the perspective groups represent a real opportunity to look at topics differently than had been possible in the past (utilizing case studies in the tutorial group context). Students have expressed the opinion that the perspective groups allow them to interact with a new group of people, while still maintaining contact with the old, that they can focus better on a topic, etc. In general, they like the addition of the perspective groups and find them valuable. It probably would not have evolved without the "spinning of the wheels" and the "endless futile discussion" of January 28th.

Following is a selected list of statements from interviews with and evaluations by students and staff, and interviews with other School of Education faculty that are fairly representative of the general sentiments expressed concerning the strengths of PROBE.

o Flexibility

- Responsiveness to students
- The learning community that develops in PROBE - the interpersonal relationships are supportive
- Experiential focus
- Emphasis upon each individual being responsible for her/his education
- Emphasis upon hands-on, practical approach
- Self-directed learning
- Strong peer support
- Good faculty leadership and support
- Structure with freedom
- Small group work
- Early-on student teaching experience
- Two student teaching experiences
- Latitude to pursue an interest - to do what you want to do, be what you want to be
- Support system
- Flexibility in design
- Tutorial structure
- Accessibility of the staff
- Collegial relationship with peers
- Maturity of colleagues
- Final individual projects
- Sharing of individual projects
- Development of our group skills
- Encouragement to use your own strengths and personality within tutorials, perspectives, and large groups
- Active involvement of students in learning
- Good group solidarity - [tutorial] group even stays together in the large group meeting.
- Self-directed learning - you have a say in what you will learn, and how.
- The students - there is no one in PROBE that should not be in the classroom
- Diverse backgrounds [of the students]
- They are not really students, but more like colleagues.
- The coherent philosophy it attempts to put into practice
- The merging of theory and practice
- "I don't know if we have <u>the</u> answer in PROBE, but it's an interesting program; the faculty are excited, so there mustbe something happening there. Those guys have been around the barn a few times [and, thus, know what they are doing]."
- Providing an alternative for non-traditional students - older, more mature; they do not fit into the traditional program.
- Staff rotating in and out so as not to get burned out
- "The schools like the PROBE students; they like the maturity."

<u>Weaknesses</u>

Many of the strengths of PROBE also define its weaknesses - for any dimension has two ends. The staff, as indicated above, are

considered to be one of PROBE's strengths. But, they could be a weakness if they were not extremely committed, if their "facilitator" skills were less than superior, if their personalities did not mesh well with the students', of if they could not pull back from the "teacher" role sufficiently and, thus, continually dominated the small group sessions with their own ideas and ideology. As one former staff person put it:

> Dependence on ... a few faculty. When they are superstars, it's a Hell of a program; when they are weak, it's a mess. For the most part, they have been fine.

There is also the problem of finding a sufficient number of qualified faculty who are willing to take on the job - and can do so without compromising their careers. As a senior faculty member indicated:

> PROBE takes an extraordinary amount of [an individual faculty person's] time. It is a dilemma when you have new faculty [who are working toward tenure and promotion, since it is counter-productive for them]. We may not be able to staff PROBE with regular faculty if we have the retirements [of full professors] we expect and do the hiring [of assistant and associate professors] we expect.

As another faculty member stated:

> PROBE could disappear overnight if committed faculty are not available.

In like manner, as the philosophical underpinnings of PROBE are one of its strengths, so also do they create problems for the program and, thus, become perceived as program weaknesses. Most of the "weaknesses" of the program relate, in one way or another, to several dimensions/tensions that characterize PROBE.

1. Theoretical discussion/understanding of an issue versus practical applications of concepts.

2. Ideals versus mechanics (a bag of tricks).

3. Strict adherence to the philosophy(ies) of PROBE versus a desire for structure and direction.

4. Process versus task closure.

Staff and students both exhibit differing orientations with respect to these dimensions/tensions. One staff person, for example, lets students know when they have strayed (or, are trying to stray) from the "pure PROBE process." He is usually quick to remind students about the PROBE philosophy when they start to wander. Some students, on the other hand, ever cognizant of the fact that they will soon again be facing a room

full of high school students are desperately seeking techniques: for teaching, for lesson planning, for classroom management, and for generally surviving teaching. Theory and process are nice, but time is short - and closing fast - for them. No student, however, is entirely at one end of any dimension - nor is any staff person entirely at the other.

However, by having both philosophers and practitioners on the staff, which PROBE does, neither lets the other get too far off track. As one staff person said:

PROBE students are becoming leaders [in our schools]. They need a variety of views [to be professionals]. You have to have a theoretical perspective, but you can't be so "heady" you can't put together a grade book. There has to be a balance.

Students also indicate that there is a need for a balance in their preparation. As one student noted:

In student teaching, our ideals were overwhelmed by the mechanics of the situation.

Another strength of the program is that both staff and students represent a range of orientations with respect to these dimensions. This causes/maintains certain tensions within the program, but the tension is generally beneficial. Without some counterbalancing forces, the program might evolve into something very different from what was originally intended. The balance <u>is</u> maintained. In the process, however, some frustrations arise.

The following is a representative list of statements indicating some of the perceived weaknesses of PROBE, as determined by students, staff, and other School of Education faculty.

- The ambiguity
- The lack of continuity; sometimes there is change for the sake of change, rather than for need.
- Some students do considerably less than others.
- There aren't clear criteria for the assignment of grades.
- <u>Too much</u> lack of structure - to the point sometimes where purpose and meaning is so unclear as to inhibit active participation.
- "The time shared is too short, in terms of everything people have to offer."
- <u>Strongly</u> feel we need much more focus in areas of discussion
- The staff needs a clearer idea of what they collectively want to accomplish.
- Some staff tend to dominate tutorial groups.
- Not enough group processing process
- Not enough <u>substantial</u> reading to create a context for discussion
- Lack of reality in the case studies
- Don't see enough of a variety in faculty

- Need to be clearer on faculty expectations - don't tell us what to do, but be clear on what the expectations are.
- Some staff have scared some people in the tutorial group so they are afraid to speak out.
- Rotation of faculty is good, but it also creates a problem of consistency/continuity from year to year.
- We need to do a better job of training students at the beginning of the program; they need some classroom management skills, teaching methods, and observational skills so that the [teaching and] observations will be moremeaningful.
- PROBE has an almost total Anglo, suburban, middle-class orientation.
- There is some problem in maintaining accurate records of the activities of PROBE students - who they are assigned to, who they are working with, what schools they are visiting.
- The same weakness of any program - it depends on who is leading the tutorials, the amount of work going into it; this year has been very positive; last year there wereproblems with the structure, it was too loose.

V. PROBE'S IMAGE

The images of an educational program, just as those of any other "product," are usually not congruent among the several interested constituents that may view that program or product. Images are important, however, since they usually make a significant difference in funding available, other resources available - including personnel willing to participate - clients interested in participating, the success of program outcomes, the acceptance of the products of the program in the larger community, and the difficulties (or lack thereof) that must be resolved in the process of conducting the program.

This segment of this report will be incomplete at this time since only PROBE students and staff and other faculty in the School of Education have been observed and interviewed. This has provided some second-hand information on perceptions of PROBE in the larger university community and at the school district level, but representatives of those constituencies have not at this time been interviewed or surveyed. An important group from which information is yet to be obtained is former PROBE students. At this time, a survey of them is being conducted; the results will be integrated into a revision of this report.

If PROBE has aspirations toward institutionalization within the framework of the School of Education, or elsewhere, then those aspects of its image which produce negative reactions need to be assessed and altered - to the extent that this can be accomplished while at the same time remaining true to the PROBE model and philosophy.

As stated earlier, and indicated privately and publicly in a

number of different contexts, both PROBE students and staff support PROBE, its underlying model and process of learning, and the program outcomes. Neither student nor staff assessments of the program are entirely positive - as can be seen by reviewing the list of "weaknesses" in Appendix B - but the overwhelming response by these participants is that the program is very worthwhile, is very satisfying, and does a good job of preparing students to be teachers. It is seen as especially appropriate for the more mature, non-traditional student for which it was designed and which it recruits. As one student summed it up at the "wrap-up" retreat:

Overall, we had a long list of strengths. PROBE was very good for us; the advantages far outweighed the disadvantages.

PROBE students set themselves apart somewhat, both mentally and politically, from other education students. This is probably a good strategy to help accomplish the intensive year of study and teaching required of the program; it is probably also helpful in creating an image of the PROBE participant as a somewhat different type of job applicant and different quality of future teacher.

In this difference lies another of PROBE's great strengths. It is bringing to the teaching profession a number of excellent people who probably would not otherwise consider teaching as a career. Some students indicated that they would have participated in the regular teacher certification program - though they all preferred PROBE. Many others, however, stated that they would not have become certified were it not for the alternative provided by PROBE.

As reported by both PROBE staff and other School of Education faculty, constituencies outside the School of Education generally feel very positive about PROBE. One faculty member reported:

Everyone knows a little about it - even in districts where PROBE is not occurring. People ask, "How is PROBE doing?" The [university administrator's] wife is interested in becoming involved. He had heard about PROBE through the grapevine.

Similarly, two other faculty - who have had extensive contact with school district teachers and administrators, and who have advised both PROBE students and students in the regular certification program - had the following to say about the image of PROBE and PROBE students.

The schools like the PROBE students; they like the maturity.

PROBE students [however] are making the same mistakes as regular students - they are looking for jobs in nearby schools. Since PROBE has a holistic program,

[students] would be open to going to a variety of places to teach. A lot are still staying in Boulder, though.

I've never heard anything derogatory about PROBE, only positive comments.

PROBE people do not require nearly as much supervision as others.

In areas requiring more of teachers, and more maturity, PROBE is a wave of the future.

I would get my certification through such a program - were I to do it.

Students frequently request it - older people trying to get out of the 330 requirement. But, they often don't know about it. We need [to get] better information to them - so they know about the alternative.

Regular [program] teachers, after one and a half years of teaching, get ugly surprises. Some of the kids [in the regular program] go out and act bizarre. This does not happen with PROBE. If there are reservations regarding [the qualifications of] PROBEr's, they are well-known, well-documented within PROBE [because of the more intense interaction with faculty tutors].

Within the School of Education, the image of PROBE is mixed. As indicated, there is considerable positive reaction to the program. There are, however, those who have serious reservations about how well prepared PROBE graduates are. These concerns take four major forms:

1. Concern that PROBE graduates have received insufficient training in methods and have insufficient depth in their specialization.

2. Concern that there has been no systematic evaluation of PROBEgraduates to determine what skills they possess and how well they are performing as teachers.

3. Concern that accurate records have not been maintained about the activities of PROBE students such as who their advisor is, who they are working with, and what schools they are visiting so that when questions arise about their activities there can be a quick and efficient response.

4. Concern that there might be an attempt to broaden the number of students served by PROBE, or to extend PROBE to the elementary level, thus using scarce resources that could otherwise be utilized

for the regular program.

The first of these concerns is the most wide-spread, having been voiced by several faculty who were otherwise very positive about the program. While some raised this as a concern, they were not necessarily convinced that courses were the solution to their concern. They just felt that it was an area that should continue to be explored. Others were much more adamant in their contention that this was a major PROBE failing. (More detail about these concerns can be obtained by reading the list of weaknesses under code "5" in Appendix B.)

In terms of what to emphasize about PROBE's characteristics so that its image among non-PROBE participants will be as congruent as possible with the image that participants have of the program, the following are suggested:

- That PROBE is an alternative to the regular certification program, but it is not for everybody; its special value is for the more mature, non-traditional student who does not fit into the traditional program.

- That PROBE is for a different type and calibre of student, particularly those interested in a career change and willing to accept the intense nature of the full-time, one year commitment required of participants.

- That PROBE emphasizes a different philosophy of learning (versus "teaching") and make known, in a concise informative fashion, just what that philosophy is.

- That PROBE is designed to be very adaptable to the needs of participating students, that students have an active part in determining what will be learned and how, and that PROBE is problem oriented and experience based.

- That PROBE learning is holistic in nature, that there is an attempt to understand the larger system, rather than to just have command of pieces of it, and that students have the latitude and are encouraged to pursue their interests wherever they lead.

- That PROBE provides teachers for the unusual environment, for the more challenging school situation.

- That PROBE's graduates have been successful at finding good teaching positions and have performed well in those positions. [This latter statement must still be documented through a follow-up study

of PROBE graduates and their superiors.]

VI. THE INSTITUTIONALIZATION OF PROBE

The question of whether PROBE will become a permanent entity has a number of components. There are questions of acceptance, awareness, funding, staffing, location, administration, institutional commitment, possible expansion, and success. Cross-cutting these are questions relating to the model, continuity, and content.

Acceptance, Awareness. These components have, to some extent, been discussed above - under "image." A program's chances for survival and permanence will generally increase as acceptance by different constituencies increases. Acceptance need not be total but acceptance by certain people is critical.

Information dissemination, in line with the suggestions made at the end of the "image" section, would probably increase awareness, and acceptance, among those where there has generally been a favorable response in the past. If more potential students knew about PROBE and more districts received information of the type described above, there probably would be increased acceptance of PROBE students as student teachers, more demand for PROBE graduates as teachers, and for the program in general. This would, in turn, probably increase the institutional commitment for the program.

Care would have to be taken, however, to not conduct any such informational campaign too aggressively since there are indications that to do so might also mobilize negative reaction among those within the School of Education who have yet to be convinced of the value of PROBE.

Funding. Currently, the student credit-hour load for faculty and teaching assistants assigned to PROBE is approximately the same as for other faculty in the School of Education. During 1987-88, two TA's were assigned on a quarter-time basis and one on a half-time basis. With the change to three half-time TA's for the coming year, the cost-effectiveness of the program will be reduced somewhat - unless a few more students are served.

Overall, or long-term, cost effectiveness is somewhat harder to estimate. Fewer PROBE students than regular certification students drop out over the course of the program. An unknown is what proportions of the graduates of each type of program become teachers and, of those who do, what proportions continue for any significant length of time. More information in these areas could be provided with more systematic follow-up of both types of programs.

Staffing, Location, etc. As indicated earlier, the availability of staff who are willing to commit to the extra demands of PROBE is probably the major factor that will "make or break" the

program in terms of institutionalization. The "dilemma" for new faculty, discussed under "weaknesses" of the program, of PROBE being counter productive when thinking about tenure and promotion requirements may lead to the need for alternative means of staffing PROBE. Alternatives might include the following:

- Developing a "PROBE district" with more school personnel assigned to the program in place of some of the university personnel currently assigned. PROBE, in this context would become more of a professional development school for the district.

- Changing the PROBE model somewhat to be more consistent with the demands of a professional development school.

- Making more use of the clinical professors within the current program framework.

- Utilizing the PROBE model for the entire teacher education program. Associated staff would, thus, also be utilized, but with some changes in their roles.

Success. A majority of the students who complete the program get teaching jobs - if they want them. Are the graduates doing anything different in the schools where they are teaching? This we do not know for sure. Probably they are. There has as yet been no systematic follow-up of PROBE graduates to determine how well they have done in obtaining teaching jobs, how well they are doing in their jobs, how wellthey perceive themselves to have been prepared, or what suggestions they might have for how PROBE training could be better conducted. A follow-up survey is currently being conducted, the results of which will be incorporated into a revision of this report.

APPENDIX B

Practice Profile

PRACTICE PROFILE:
THE UNIVERSITY OF COLORADO
PROBE TEACHER EDUCATION PROGRAM

Prepared by
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and
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March 15, 1988

PRACTICE PROFILE:
THE UNIVERSITY OF COLORADO
PROBE TEACHER EDUCATION PROGRAM

I. ORGANIZING AND MAINTAINING PARTNERSHIPS: BETWEEN THE UNIVERSITY AND SCHOOLS, WITHIN THE UNIVERSITY, AND WITHIN SCHOOLS

I.A. Planning Tasks: Establishing Appropriate Organizational Structures Within the University

Ideal

A Probe staff consisting of approximately three faculty members and three graduate assistants is established each year. They are responsible for operating the program within the broad guidelines established for the program at its inception five years ago. They have great latitude, however, to modify the program each year in a manner that is consistent with the philosophy of the program. It calls for active student participation in its design and operation thus resulting in significant differences in the program from one year to the next.

Acceptable

A number of persons on the Probe staff may vary depending on the number of students in the program. The program may be essentially as it was the year before if it is a result of careful attention to evaluation information acquired the past year and students have an active voice in making program decisions.

Unacceptable

The program does not continue evolving, the staff dictates its form, or modes of instruction revert to more traditional university patterns.

I.A. Planning Tasks: Establishing appropriate organizational structures between the university and schools

Ideal

An advisory council consisting of an administrator representing each of the participating school districts meets with the Probe staff twice per year. They advise the staff in the planning of activities involving students and the schools including student observation in the schools, student teaching and joint meetings consisting of student teachers and cooperating teachers.

Acceptable

Meetings are held and most, but not all, matters of common concern are fully resolved.

Unacceptable

Joint planning is not sufficient to result in mutual commitment to joint programmatic endeavors nor sufficient to result in adequate resource allocation to the program on the part of both the schools and the university.

I.B. Program Development Tasks: Identifying Program Goals and Components

Ideal

While the overall goals of the program remain essentially constant from year to year, the components of the program vary based on past experience and group decision making as described above. The Probe staff takes the key role in making these decisions based on student evaluations from the previous year and in fostering student involvement in the design of selected components of the program within the overall structure.

Acceptable

The staff may vary the amount of decision making delegated, but the amount of student involvement must be sufficient to provide the experience needed to give them a sense of being responsible for their own learning and have experience as an active participant in a very student-centered instructional approach.

Unacceptable

Lack of student involvement or lack of faculty guidance resulting in high expectations of students and demands of intellectual and scholarly rigor.

I.C. Implementation

Ideal

Implementation of the program is carried out by the program staff as described above under the leadership of the program director during the academic year. In the summer preceding the beginning of an academic year the program director and a teaching assistant responsible for administrative duties do a considerable amount of preparation work. This planning includes a meeting of the PROBE Advisory Board made up of school district representatives. During the academic year weekly staff meetings are a crucial part of

maintaining the program. They generally require one and one-half hours each.

Acceptable

Implementation of the instructional program for the year takes place and the program functions well but a few problems occur.

Unacceptable

The staff does not meet for sufficient time to maintain good interpersonal relationships and get the necessary planning done.

I.D. Assessment

Ideal

Ongoing assessment is part of the process of the program. It includes written evaluations from students at the end of each stage of the program (approximately four times per year) and from cooperating teachers at any meetings of which they are a part. In addition, weekly staff meetings are used on an ongoing basis as a means of assessment and program modification. Given the evolving character of the program such assessment and program modification are essential.

Intensive assessment of the overall program structure and its operation on a one-time basis is being done using qualitative approaches. The program staff carried out this function during one year and followed by a semester in which an anthropologist was brought in from the outside to study the program.

I.E. Institutionalization Tasks and Roles

Ideal

1. The director and staff change on a yearly basis but are drawn from a group of faculty within the School of Education who are committed to the program.

2. Faculty, after having worked in the program for a two year stint, leave it, but stay in touch and generally return at some future time.

3. This turnover results in a broader base of support among the faculty of the school and keeps the program from becoming the personal domain of a few key people.

Acceptable

Some faculty or teaching assistants stay on for a third consecutive year.

Unacceptable

The staff of the program becomes exclusive and does not change. The program is seen as undermining the conventional program rather than providing a valuable alternative specific to a certain population.

IF. Maintaining Communication with School District Personnel

Ideal

1. Communication with cooperating teachers is conducted by mail, phone, personal visits, and three full day meetings/year.

2. Communication with building administrators is maintained through visits, calls, correspondence.

3. Communication with district administrators and meetings of the PROBE Advisory Board occur on a regular basis.

II. RECRUITMENT AND SELECTION PROCESSES

II.A. Student Recruitment and Selection

Ideal

To be admitted a candidate must:

1. Be at least 25 years of age.

2. Hold a bachelor's or higher degree in the general area of his or her proposed teaching field.

3. Present a G.P.A of 3.0 or higher for all undergraduate and graduate work.

4. Make a commitment to full-time participation in the program.

5. Be able to function effectively in a group setting and engage in articulate presentation of ideas as demonstrated in a group interview.

Acceptable

1. An occasional candidate under 25 may be admitted if he or she demonstrates exceptional maturity, experience, and promise as a teacher.

2. A student in progress toward a bachelor's degree may be admitted contingent upon graduation prior to beginning the PROBE program.

3. A candidate may be accepted with less than a G.P.A of 3.0 if he or she otherwise demonstrates exceptional academic potential, maturity, experience, and promise as a teacher.

Unacceptable

1. Admission of a candidate younger than 25 with limited experience or a questionable level of maturity.

2. The candidate does not attained a bachelor's degree prior to the program's first day of classes.

3. The candidate has less than a 3.0 and does not otherwise demonstrate exceptional academic potential, maturity, experience, or promise as a teacher.

4. The candidate expects to do significant academic work outside of the program or hold a job which requires a major time involvement.

5. The candidate does not demonstrate sufficient competence in a group interview.

IIB. Recruitment and Selection Processes (University Instructors)

Ideal

1. Program staff are drawn on an alternating basis from interested and committed School of Education faculty for a two year assignment, allowing the participation (and sense of ownership) of a variety of faculty.

2. Teaching assistants are selected on the basis of their maturity, teaching experience in schools, and commitment to problem based education.

Acceptable

Occassionally a professor or teaching assistant stays on the program staff for a third consecutive year.

Unacceptable

The same faculty members stay on the staff indefinitely to the exclusion of other interested faculty.

II.C. School Cooperating Teachers

Ideal

Cooperating teachers are selected from a recommended list compiled by program staff based on the recommendations of school administrators, former PROBE student teachers and PROBE staff members.

Acceptable

Students deviate from cooperating teacher list but do so on the basis of a principal's or vice principal's recommendation with the approval of the PROBE staff.

III. INSTRUCTIONAL CONTENT

III.A. Nature and Choice of Content

Ideal

Choice of content in the program is largely determined by a list of approximately forty competencies prescribed by the Colorado Department of Education as essential for any teacher education program. A series of case studies has been developed which raise issues pertaining to all of these competencies. The particular research base and forms of knowledge which are used to address these matters come from the students independent work and are pursued under the direction of a faculty member. Later in the program instructional content is no longer determined by the case studies but by student developed processes for addressing school-based problems from a variety of perspectives including philosophical, psychological, sociological, and the nature of the content areas.

III.B. Sequencing and Integration of Content

Ideal

As much as possible, experience precedes theory, as evidenced by the current structure which includes: a) 100 hours of classroom observation in the first two months of the academic year; b) case study research and discussion incorporating experience in the schools; c) a nine to ten week student-teaching assignment begining in early November, followed by a 9 week period of intense academic work at the university which, in turn, is followed by a second 5-6 week student teaching assignment.

III.C. Emphasis and Scope of Content

Ideal

All of the Colorado Department of Education curriculum content requirements are met. Emphasis is determined jointly by staff and students, with students exercising a considerable franchise in selecting topics for an indepth study once the minimal requirements have been met.

Unacceptable

All Colorado Department of Education requirements are not met.

III.D. Use of Content

Ideal

1. Various models of teaching are modeled by students within tutorial groups.

2. University supervisors and cooperating teachers encourage student teachers to employ various models of teaching in classroom situations.

IV. INSTRUCTIONAL PROCESSES

IV.A. Teaching Strategies

Ideal

The instructors act primarily as facilitators of a learning process, not as dispensers of knowledge. Ideally, the instructor creates a climate in which the group can function effectively in making its own decisions and in which individuals can take responsibility for their own learning. The role of the instructor is not to teach, but to help students learn. In terms of group processes, the instructor gradually turns the role of group facilitator over to the students themselves. In terms of setting academic standards and accountability for them, the instructor never relinquishes this role, although he or she tries to communicate the standards in a way that students can take them on as standards for themselves to use in assessing their own work.

Unacceptable

The instructor usurps the student's role of being responsible for his or her own learning.

IV.B. Revised Instructional Roles

Ideal

1. A University instructor's role is more of a facilitator of learning in small groups (tutorials, perspective groups) rather than a lecturer. This person actively fosters student initiative and responsibility for learning.

2. Cooperating teachers are encouraged to give student teachers substantial responsibility early on.

3. Students are prepared for student teaching by significant school observation, study of various models of teaching, case study research, discussion and extensive personal study of philosophy, psychology, sociology and content area perspectives.

4. Students contract for individual research projects in the spring term and share them at the end of the term with the tutorial group or the whole program.

IV.C. New Instructional Settings

Ideal

1. Group study takes place in small groups rather than in large group settings.

2. Planning and group building retreats are held at the beginning of each term.

3. Tutorial meetings are held in public schools and staff homes, as well as on campus. There is an emphasis on collegiality and professionalism.

IV.D. Organizing components (Time Blocking)

Ideal

The organizing components change each year as the program evolves. During the current year the configuration is as follows.

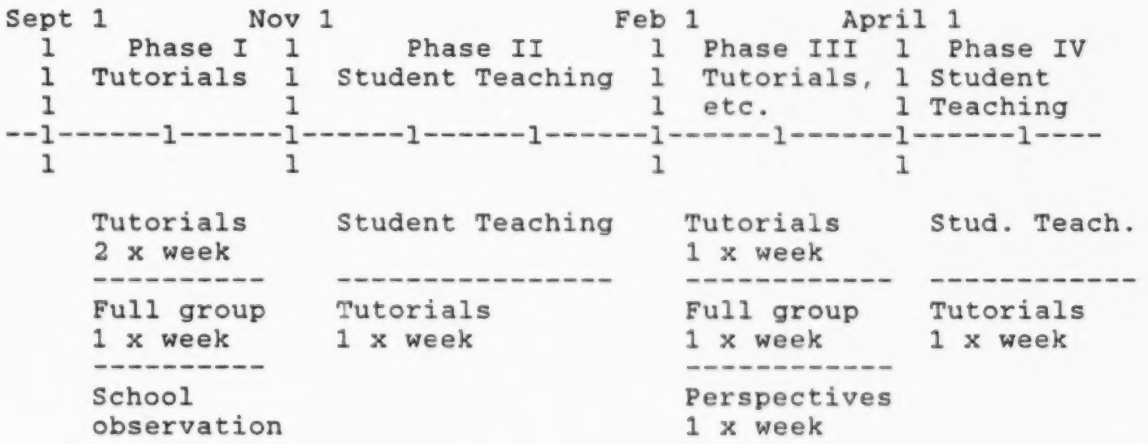
1. During the fall term of on-campus academic study (September and October), tutorial groups meet twice each week for three-hour sessions and the full group meets for one two-hour session.

2. Students are organized into tutorial groups of 8-10.

3. Each tutorial is led by a professor (regular or clinical professor) of the School of Education and a teaching assistant

4. During the Spring academic period (February-March) the tutorial groups meet for one three-hour session and additional times as needed.

5. Perspective Groups: In the academic portion of the spring term each student selects one of four perspective groups in which to work: the philosophy, psychology, sociology, or content areas perspectives group. Each group has responsibility for organizing some full program meetings, sharing their perspective with the full PROBE student body on various topics, and studying and discussing in depth topics in their field.



Acceptable

1. A maximum of twelve students in each tutorial group.

Unacceptable

1. There are more than twelve students in a tutorial group.

2. A tutorial group is led by a teaching assistant as the primary instructor.

IV.E. Supervisory Processes

Ideal

1. Each faculty member supervises 4-6 student teachers and emphasizes support more than evaluation.

2. Before each student teaching assignment a full day meeting is held for students, cooperating teachers and university

supervisors so that (a) expectations can be laid out and mutually agreed upon and (b) the cooperating teachers can be made aware of the nature of the program and its students.

3. Student teachers are visited every 2 to 3 weeks after the initial meeting.

4. Weekly meetings of student teachers are held.

Unacceptable

1. University supervisors visiting student teachers less than five times during the 14-15 weeks of student teaching.

2. Student teachers meet less than bi-weekly.

V. ASSESSMENT

V.B. Assessment Processes

Ideal

1. Staff, students and cooperating teachers periodically are given opportunities to evaluate the program in writing and orally.

2. Information derived from evaluations is used to modify the program within the given academic year as well as in subsequent years.

Acceptable

1. Staff, student teachers and cooperating teachers formally evaluate four times per year.

2. Evaluative information is used in planning for the following year.

Unacceptable

1. Evaluation is not done or used in planning.

APPENDIX C

Reflectivity in the PROBE Teacher Education Program

REFLECTIVITY IN THE PROBE TEACHER EDUCATION PROGRAM

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REFLECTIVITY IN THE PROBE TEACHER EDUCATION PROGRAM

A radically different teacher education program called PROBE (Problem-Based Teacher Education) is now in its fifth year of operation at the University of Colorado. It is designed for persons who have already completed a bachelors degree with a major in a subject field, and have considerable ability to work independently.

The program, having no formal courses whatsoever, is built around small tutorial groups, case studies, extensive independent work, and ongoing experience in school. The program components reflect academic instructional preferences of non-traditional students as shall be described later.

The original PROBE program was influenced in its development by the medical education program of McMaster University in Hamilton, Ontario, which bases its approach on case studies, tutorial groups and a problem-orientation rather than a course structure. A School of Education task force worked on development of the new program during the course of one academic year with considerable assistance from a member of the faculty of the McMaster University Medical School who was in residence at the University of Colorado during that year and served as a consultant to the planning task force. The program was initiated the next year on an experimental basis with a small number of students. The program has continued to evolve since that time with significant changes made each year.

Beginning with the third year, greater participation of public school personnel, more attention to the study of strategies of teaching and more extensive documentation and assessment were incorporated into the program under a grant from the U.S. Department of Education's Office of Educational Research and Improvement. Again next year, as both before and during the federal support, the program is expected to operate on local funding which is no greater than that devoted to the traditional teacher education program in the same institution.

KEY PROGRAM CHARACTERISTICS

The program has a number of significant departures from traditional practice. One of the important aspects of the program is the selection of appropriate students. They must meet the following criteria:

1. Completion of a bachelors degree with a major in an appropriate teaching field,
2. Three or more years of work experience in addition to their college degree (in essence, this means all people in the program are age 25 or older), and
3. Exhibit an acceptable level of relevant competencies and characteristics in an interview conducted by the PROBE staff.

The program attracts a high caliber of students; they have strong academic records, important prior work experience, and considerable maturity. The high quality of students is largely due to the program's attractiveness to highly capable people wishing to make a career shift. They are fairly evenly split between men and women and have included minority, visually handicapped and learning disabled individuals.

The program requires students to participate for one academic year of study extending from September through May, in a full-time integrated program of study and school experience. During the portions of the program when the students are not engaged in student teaching, the majority of their work is organized around study in a so-called tutorial group of 8 to 10 people which meets twice weekly for three hours each time. Thus far, the program each year typically has had three such groups, for a total of just under 30 students. The tutor in charge of a group is a facilitator and resource person rather than a dispenser of knowledge. The majority of the work of these groups is organized around a series of quite simple case studies which serve to raise issues. Much of the discussion is devoted to clarifying these issues and expressing them in a form which will serve as a basis for extensive investigation outside the tutorial group.

Throughout the program students have experience in secondary school, as well as in a variety of alternative educational settings. They begin their experience in schools the first week of the program and, under the current organizational pattern, they begin the first of two full-time student teaching experiences at the beginning of November. After approximately ten weeks of student teaching (ending in late January at the end of the public school's first semester) they return to the university campus for a period of approximately two months of study. With a solid base of school experience at this point, they can give themselves to more intensive study and reflection than any other point in the program. The final part of the year as currently configured, is a second student teaching experience in a different school setting.

Some consideration of the philosophical basis for the program may be in order here. The program has a consistent and unifying mode of operation, but the underlying theoretical rationale held by the persons responsible for its operation probably varies considerably from one person to another. One faculty member may primarily promote the mode of operation on the basis of a carefully reasoned formal philosophical position, someone else may advocate it mostly from a more pragmatic commitment to a philosophy of "experiential eduation" and yet another faculty member may be committed to it mainly from a constructionist view of learning. For example, even though different faculty members would probably defend it with a different rationale, all would adhere to one of the key operational notions of the program, namely that students must take responsibility for their own learning.

Given this variation in faculty perspectives, and the open-ended and fluid nature of the program, it should not be surprising that successful operation of the program is dependent on close faculty cooperation and commitment to weekly staff meetings where decisions are made after thorough appraisal of the competing alternatives. Experience has shown that a minimum of one and one-half hours for this meeting, and a commitment of all staff to its important role in the program, is essential.

As indicated earlier, students in the PROBE program are expected to take responsibility for their own learning. This operating principle means they are not just to learn a carefully delineated and prescribed set of competencies but are to examine the world of education for themselves in a manner that will allow them to make decisions about what is most important for them to learn and integrate into their personal theoretical perspective and their growing collection of knowledge and skills. Almost by definition, such an approach requires reflectivity.

WHAT IS REFLECTIVITY?

A definition of reflectivity is called for at this point since the term evokes a variety of images. An operational definition would be ideal, but probably is not possible within the context of the PROBE program. The standard dictionary definition is that it is the ability to think and consider quietly and calmly, especially following some event. In this instance, of course, everything under consideration has something to do with the educational process. Furthermore, the desire of the personnel operating this teacher education program is that the students in it not only reflect upon their experience, but as a result also change some of their patterns of behavior in a way that results in improved performance in teaching.

It should be noted that the specific term, reflectivity, is not typically used in the PROBE program. Therefore, no attempt has been made to develop a specific operational definition of it in that context. One will not be invented here for purposes of this discussion. Instead, an attempt will be made to describe some of the things done in the PROBE program that have characteristics deserving of carrying the reflectivity label.

HOW DOES PROBE DEVELOP REFLECTIVITY?

Since a key characteristic of the PROBE program is helping students take responsibility for their own learning and construct their own meaning as a result of their educational experience, it is not surprising that reflectivity is both a highly desired process and outcome of the program. The initial event in the program, a three day retreat at the very beginning of the academic year is the beginning of this focus. Evaluations done of the program over the years consistently have labeled this

event as essential to the program. Its primary function is to foster communication among everyone concerned and begin the group building process which makes it possible for people to work well together. In addition, however, it is the beginning of the process of helping people take responsibility for their own learning. Various activities or "initiatives" in which the students are placed require them, independent of faculty assistance, to begin solving problems and addressing educational issues. The focus is on them as individuals, the group, and the "educational world" into which they are seeking to enter and establish a career.

The previously mentioned tutorial groups have many of these same characteristics. A climate is created within these groups which fosters collegiality, cooperative learning and mutual support. Within this context, the pursuit of intellectual ideas is invigorating, challenging and also focused on the real world of schools which they are simultaneously experiencing. The process by which case studies are pursued in this context may be illustrative of the point.

The particular case studies to be pursued at a given time in a particular tutorial group are selected by the students while considering the list of state mandated competencies for which acquisition is expected in the program during the year, their recent experiences in schools, and personal reflection on their development as professional educators. The case studies consist of quite simple, short (typically about one page) descriptions of a situation involving schools, teachers and/or students. The manner in which the case studies are addressed is largely prescribed but the role of the faculty member in the process is largely that of a facilitator, and resource person, rather than dispenser of knowledge. The beginning point of the discussion is the clarification of issues raised in the case study. The group may spend as much as an hour identifying the several issues raised and getting them into a form that will serve as a basis for the extensive investigation they will pursue as a group and individually.

Initial identification of resources to use in addressing these issues is done in the group with the assistance of the participating faculty member, followed by individual work outside the group which serves to identify still further resources. These resources include standard printed materials available from various sources as well as personnel within the university and the secondary schools where the students spend some of their time. Interviews with teachers, administrators, counselors and policy makers are among the resources to which the students turn in addition to standard reference materials.

Once issues are identified, individuals, or two or three persons working together, pursue a particular issue in depth. At this point, the ability to work independently, to take initiative and to complete tasks becomes imperative.

A week or more later, after completing their independent work on a particular issue, individuals report the results of an investigation to members of their tutorial group. To some extent they provide the teaching for their peers on a particular issue. In addition, they direct them to the most useful resources for pursuing their individual study of the various issues.

Coverage of the important matters needed in the teacher education program is ensured by inclusion of case studies which parallel a listing of competencies required for certification by the Colorado Department of Education. These requirements are used within the tutorial groups as a guide for the students in defining areas which they must address. Due to substantial differences in the background of individuals in the program, as well as personal interest, there is considerable variation in the amount of time individuals devote to a particular topic. In each case, however, individuals pursue the various topics in sufficient depth to meet formal expectations.

In keeping with what research says about human learning, the responsibility which individuals take for their own learning results in high motivation, large amounts of work completed and high levels of competency. High expectations are placed on the students by their tutors and their peers, and students are accountable to them as well, but responsibility for one's own learning is the corner stone of the program.

Another activity conducted within the context of the tutorial groups also places a high value on reflectivity. Students are expected to maintain a journal in which they describe some of their experiences in the school setting and reflect upon them. This journal is in addition to a log of their time and activities in the schools at times other than during student teaching. While some students have a tendency to focus their journal entries heavily on simple description of events and experiences, they are encouraged to use them as a place for reflection which includes their personal attitudes and judgments about schooling. Reading such journals often provides real insight into how students have grown professionally as a result of their experience in the PROBE program.

While reference already has been made to students' experience in schools, it probably deserves further discussion with respect to reflectivity and its total role in the program. Prior to student teaching the typical student probably spends one and one-half days per week in the schools. It is not just observation and participation in the classic sense. It also is a source of information for some of their case study research as described earlier. This is the context in which they are able to interview school personnel to acquire some of the needed information. It also provides experiences which are brought to the tutorial group for discussion and analysis as a further aid to the process of reflection. In addition to regular contact with one school, they are encouraged to visit a variety of different schools and tea-

chers. Mechanisms have been established which make it possible for them to initiate contact on their own, through the principal's office, with a wide variety of schools in several districts.

A recent modification to the program may illustrate further its evolving nature and dependence upon student decision making in its operation. For the first time this year, the program has been structured so the first period of student teaching ends in late January (the end of the first semester of the public schools). This period is following by approximately two months back on the University campus before they return to a different school setting for a second student teaching assignment.

A process was initiated at the beginning of this two month period in which the students developed with the faculty a plan for all aspects of the operation of this two month period including the student groupings, work expectations, faculty and student roles and topics to be considered. The one and one-half day planning process resulted in a plan which included (1) a focus on practical educational matters examined by task groups interested in particular perspectives (philosphical, sociological, psychological and content areas), (2) individual study with a heavy writing component requiring personal integration of perspectives on practical matters and compilation of teaching resources, (3) tutorial group sessions with primary attention to the integration of knowledge and (4) weekly total program meetings for coordination and sharing of resources best done in that context.

Comment is needed here regarding the means used to assess the presence of reflectivity. Given the nature of the PROBE program and its lack of formal testing within the instructional process, it is not surprising that the means of assessing it is qualitative in nature. Such assessment activities generally result in extensive descriptive information and lengthy narratives which reflect professional judgments. This formal indepth assessment is being done by skilled ethnographers, but a personal example from the present writer in his role as a faculty member, may be illustrative of the type of information that this assessment is producing.

The illustrative event occurred in a previous year of the program when all the student teaching experience was concentrated in the second semester of the program. The tutorial group met once weekly in the late afternoon to share experiences, address issues found in their student teaching and in general serve as a support group. This particular meeting of the group was approximately six weeks into the student teaching experience. Up to this point the weekly discussion had been mostly sharing "war stories" and grappling with problems they were confronting in their student teaching. I expected that this meeting of the group would be much the same but relatively early in the meeting the discussion drifted, without any prompting on my part, to the more philosophical matters underlying what they were trying to accomplish, mainly the goals of their instruction and how they

could be attained with the type of students they had in their classes. For the next hour the conversation persisted in that vein with my only personal entry into the conversation occurring at three isolated points in which I did nothing more than ask a brief question. Other than that very minor involvement, this group of budding professionals carried on a very sophisticated and high level discussion worthy of a group of experienced, highly proficient teachers. It included a great deal of reflection on experience, attention to a wide variety of socio-economic and political forces in the educational setting, consideration of many philosophical issues, and concern for the intellectual and psychological development of their students. The results of their previous "academic" study were apparent as was their experience in the schools, and their reflectivity.

Obviously the formal evaluation of the program is more than a collection of personal anecdotes, but the above event may illustrate the type of results portrayed in some of this qualitative study. Such episodes along with the keen desire of local school districts to hire the PROBE students upon completion of their program are important indicators that the program reaches the intended ends.

ISSUES

While there are many issues that could be raised in the context of this discussion about reflectivity in a teacher education program, three will be singled out.

1. How important is reflectivity as a major goal in a teacher education program?

2. How does one attain this goal in a teacher education program?

3. How does one assess the attainment of this goal?

It is obvious that the University of Colorado faculty members working in the PROBE program have concluded that reflectivity is an important goal and should be built into the program in a major way. Such a commitment, of course, does not <u>prove</u> that it <u>should</u> be an important goal. Thus, it remains an issue. The experience of the faculty with the program over the years, however, has served to reinforce this goal as the students in the program have displayed high levels of professional competency and have been eagerly sought by employers.

The answers we have offered to the second question will be somewhat apparent from the previous discussion, but some more analytic comments may be helpful. In reflecting on what is included in the PROBE program, it appears that a wide variety of factors are influential in its success. It is a broad-based program that involves intensive academic work and extensive experience in schools.

The same could be said about most teacher education programs, however, and the analysis must go further. It is clear that within the PROBE program the students receive "input" from a wide variety of sources. They are engaged in professional interaction with a wide variety of people including the usual University faculty members and public school teachers, but it is much more varied and extensive than in the typical program. Their in-depth discussions may include a wide variety of professionals including counselors, school district administrators, and other professionals such as workers in social service agencies and/or the courts. The wide variety of schools with which they have contact includes alternative and private schools as well as standard public schools. But even more important, their involvement with their fellow students is on a totally different level than in a standard program; they develop strong collegial relationships and engage in cooperative learning focused on indepth study. This involvement, coupled with extensive personal study and intensive interaction with faculty members is the heart of the program.

Other factors enter into the analysis as well. The students are highly capable people to begin with. In addition to high previous academic performance, they come to the program with other experiences and maturity.

Another factor is that reflectivity is constantly encouraged in the program, through such means as the structure of the program, the events scheduled and the overt encouragement of faculty members. Probably no factor stands out more, however, than the fact that every effort is made to place the responsibility for student learning on the students themselves. They are expected to construct their own meaning. Few attempts are made within the program to construct knowledge for them. If any one factor had to be identified and given more importance than the others, this writer would identify that one.

An answer to the final question of how one assesses attainment of this objective, is quite simple although many may find it unsatisfactory as well. Faculty members make professional judgments concerning individual student attainment of the objective based on their extensive interaction with the student over a long period of time in a variety of contexts including the tutorial group, individual conferences, and the school setting, supplemented by reading of written products produced by the students.

FUTURE DIRECTIONS

Every expectation is that the PROBE program will continue to evolve on into the future as part of the teacher education endeavors of the University of Colorado. Its present size, constituting approximately a quarter to a third of the persons seeking secondary teacher certification at the University, is not expected to change much. There is no expectation at this point

that the entire secondary teacher certification will be operated in this manner. It would not appear to be the program for all students, nor do all faculty members want to work in a program of this nature. Its innovative and effective nature is more likely to be maintained if it is limited to those students and faculty who have a strong desire to work in this kind of setting. In spite of this limitation to its scope, however, the PROBE program has an influence on the "regular" program as well. By design, faculty members "rotate" into the PROBE program for a period of about two years and then move out again, although they may return again in some future year. Thus these faculty members participate in both programs; they report that it has had a significant impact on how they provide instruction in the regular program.

Although it is still in the "talking stage," it is probable that the program will be expanded in the near future to include a group of elementary teachers and will then be operated as a K-12 endeavor, although a given student would be seeking certification in either elementary or secondary education, not both. Other changes which are quite likely to occur are more intensive involvement with one school on the part of a given tutorial group. Initial experiences with this approach in the current year indicate it can be a valuable approach which facilitates more active participation in the program on the part of school personnel.

The previously mentioned evaluation is nearing completion. At that point it will be possible to report the results of this ethnographic investigation in detail. Beyond that point, a more detailed followup of graduates of the program is expected. An up-to-date record of the location of the graduates of the program has been maintained and sufficient time has passed since the inception of the program that a detailed followup study now appears timely.

As a result of such systematic studies and the experiences of the faculty operating it, the program is expected to be a vital and influential part of the School of Education on into the future.